

PATENT COOPERATION TREATY

M

From the

INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
DAVID W. ANGLE, JR.
STITES & HARBISON
400 WEST MARKET STREET
SUITE 1800
LOUISVILLE, KY 40202

PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year)

30 MAR 2006

Applicant's or agent's file reference

0232W/00028P

IMPORTANT NOTIFICATION

International application No.

PCT/US04/03108

International filing date (day/month/year)

04 February 2004 (04.02.2004)

Priority date (day/month/year)

04 February 2003 (04.02.2003)

Applicant

ILIGHT TECHNOLOGIES, INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/ US

Mail Stop PCT, Attn: IPEA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Sandra O'Shea

Telephone No. 571 272 2378

Form PCT/IPEA/416 (January 2004)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0232W/00028P		FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US04/03108	International filing date (day/month/year) 04 February 2004 (04.02.2004)	Priority date (day/month/year) 04 February 2003 (04.02.2003)	
International Patent Classification (IPC) or national classification and IPC IPC: F21V 21/00 (2006.01) USPC: Please See Continuation Sheet			
Applicant ILIGHT TECHNOLOGIES, INC.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of ____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 02 September 2004 (02.09.2004)		Date of completion of this report 20 March 2006 (20.03.2006)	
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer <i>Sandra O'Shea</i> Sandra O'Shea Telephone No. 571 272 2378	

Form PCT/IPEA/409 (cover sheet)(April 2005)

Box No. I Basis of the report**1. With regard to the language, this report is based on:**

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☒ the international application as originally filed/furnished
- ☒ the description:
- pages 1-15 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the claims:
- pages 16-20 as originally filed/furnished
- pages* NONE as amended (together with any statement) under Article 19
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the drawings:
- pages 1-4 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
- ☒ the claims, Nos. NONE
- ☒ the drawings, sheets/figs NONE
- ☒ the sequence listing (specify): NONE
- ☒ any table(s) related to the sequence listing (specify): NONE

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to the sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/03108**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>5,6,11,12,16-24</u>	YES
	Claims <u>1-4,7-10 and 13-15</u>	NO
Inventive Step (IS)	Claims <u>11,12,16,17 and 19-24</u>	YES
	Claims <u>1-10,13-15,18</u>	NO
Industrial Applicability (IA)	Claims <u>1-24</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)

Please See Continuation Sheet

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Continuation of USPC:

362/219,217,495,540,544,545,103-106,108,133,134,152,189,198,222-225,240,246,278,326,327,800,806,812

V. 2. Citations and Explanations:

Claim 11, 12, 16, 17 and 19-24 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest an illumination device and method steps for making the illumination device comprising:

- a flexible circuit bearing a plurality of light emitting diodes (LEDs), and the flexible circuit with LEDs being encased in a light-transmitting flexible rod-like member.

Claims 1-4, 7-10 and 13-15 lack novelty under PCT Article 33(2) as being anticipated by Takeichi (English translated Japanese Patent Application Pub. No.: JP 61165583), hereinafter referred as Takeichi.

Regarding Claims 1-4, 7-10 and 13-15, Takeichi discloses an illumination device comprising:

- a substantially rod-like member 3 (Figure 1, Takeichi, page 3, line 22) having a predetermined length with a light receiving surface - the surface adjacent to the light-emitting surface of the light-emitting element 1 (Figure 1, Takeichi, page 3, line 22);
- the rod-like member 3 composed of substantially flexible compound impregnated with filler deflecting light and producing uniform light intensity pattern (Figure 1, Takeichi, page 3, line 22; and page 5, lines 5 and 6);
- an elongated and substantially flexible light source 1 - a plurality of light emitting elements connected with a flexible conductive wire 2 - positioned adjacent to the light receiving surface (Figure 1, Takeichi, page 3, line 21);
- the light, emitted from the light-source 1, entering the rod-like member 3 through the light receiving surface, being scattered (Figure 1, Takeichi, page 5, lines 6 and 7);

Supplemental Box

- the flexible compound made of silicone rubber (Figure 1, Takeichi, page 4, line 23);
- a housing 33 enclosing the light source 1; the housing positioned below and extending along the rod-like member 3 (Figure 1, page 5, line 6);
- the housing 33 including a pair of side walls - the upper portions of the walls of the left and right halves of the housing 33 (Figure 1, page 5, line 6) - defining an open-ended channel extending substantially the predetermined length of the rod-like member 3 (Figure 1);
- the housing 33 further including a floor portion - the lower portion common to the side walls of the left and right halves of the housing 33 (Figure 1, page 5, line 6) - defining substantially U-shape of the housing 33 (Figure 1 and 2);
- the housing 33 further including internal surface 32 with a light -reflective material (Figures 1 and 2, Takeichi, page 4, lines 25-27);
- the light source 1 including a multiplicity of spaced point- light sources extending along the light-receiving surface of the rod-like member 3 (Figure 1, Takeichi, page 3, lines 23-27);
- the multiplicity of point-light sources being LEDs (Figure 1, Takeichi, page 4, lines 2 and 3); and
- the rod-like member 3 defining an internal channel - the longitudinal space housing the multiplicity of spaced LEDs (Figure 1).

Claims 5 and 6 lack an inventive step under PCT Article 33(3) as being obvious over Takeichi (English translated Japanese Patent Application Pub. No.: JP 61165583), hereinafter referred as Takeichi, in view of Zamja et al. (US Patent No.: 4,195,907).

Regarding claims 5 and 6, dependent on claims 2 and 4 respectively, Takeichi discloses an illumination device comprising the rod-like member composed of substantially flexible compound impregnated with filler deflecting light. However, Takeichi does not specifically teach the rod-like member additionally include micro air balloons.

On the other hand, Zamja et al. ('907) discloses a light-conducting rod-like member 94 formed of a flexible material having micro air- balloons 92 (Figures 3 and 5, column 3, lines 22-28).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify the device of Takeichi by providing the rod-like member composed of a flexible material with impregnated micro air-balloons as taught by Zamja et al. ('907) for benefit and advantage of providing lateral reflection of light for decorative effects.

Claim 18 lacks an inventive step under PCT Article 33(3) as being obvious over Takeichi (English translated Japanese Patent Application Pub. No.: JP 61165583), hereinafter referred as Takeichi, in view of Ghandehari (US Patent No.: 5,537,297). Takeichi discloses an illumination device comprising a rod-like member optically coupled with spaced plurality of LEDs electrically connected with one another. However, Takeichi does not specifically teach the illuminating device including a rod-like member further including a collection surface adjacent a portion of the outer surface of the rod-like member, and the collection surface positioned near the light source.

On the other hand, Ghandehari ('297) discloses a reflecting lighting device including a rod-like member 12 including a collection surface 50 positioned near a light source 15 (Figures 1-3, column 3, lines 17-21 and 55- 55-59).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the rod-like member of Takeichi by with a collection surface as taught by Ghandehari ('297) for benefit and advantages of controlling the direction of the light reflected through the rod-like member.

5. Claims 1-24 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----